

15 Jun 1994

CO0PC-G
COUNTER, FREQUENCY

1. GENERAL. This procurement requires a solid-state, microwave pulse counter capable of IEEE Std 488-1978 digital bus control and data transfer.

2. CLASSIFICATION. Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

3. MEASUREMENT REQUIREMENTS. The equipment shall be capable of CW and pulsed frequency measurements as specified below.

3.1 Frequency measurement characteristics. The equipment shall automatically measure and directly indicate sine wave and pulsed signal frequencies.

3.1.1 Frequency range. 500 MHz to 18 GHz.

3.1.2 Frequency accuracy. The frequency measurement accuracy shall be within:

- a. CW: \pm resolution \pm time base error.
- b. Pulse: \pm 500 kHz or less for 200 ns pulses, improving to \pm 150 kHz or less for a 1 μ s, or wider, pulse.

3.1.3 Frequency resolution. 10 kHz or less.

3.1.4 Pulse measurement specifications. The equipment shall be capable of measuring the frequency of pulse modulated carriers with a PRF in the range of 50 Hz to 11 kHz and a pulse width of 200 ns to 1 μ s.

3.2 Input characteristics.

3.2.1 Impedance. 50 ohms nominal.

3.2.2 Sensitivity. -15 dBm from 500 MHz to 1 GHz, -20 dBm from 1 GHz to 12.4 GHz, -20 dBm from 12.4 GHz to 18 GHz.

3.2.3 Dynamic range. -10 dBm to +5 dBm.

3.2.4 Maximum continuous input. +7 dBm peak.

3.2.5 Damage Level. +25 dBm peak, minimum.

3.3 Time base.

3.3.1 Frequency. 10 MHz.

3.3.1.1 Adjustment range. $\pm 1 \times 10^{-6}$.

3.3.2 Aging rate. $\pm 3 \times 10^{-7}$ per month.

3.3.3 Stability during power change. $\pm 1 \times 10^{-7}$ for a 10% line voltage change from nominal.

3.4 Display. An electronic digital display shall be provided.

3.4.1 Measurement units. GHz and MHz.

3.5 Gate lamp. A front-panel display device shall indicate gate operation.

3.6 Hold. The equipment shall provide a means of holding the displayed reading indefinitely, independent of the gate time or resolution control.

3.7 Reset. A manual reset control that initiates a new measurement cycle shall be provided.

3.8 Self-check. A self-check function that verifies operation of the frequency measurement mode shall be provided.

3.9 Output. The equipment shall be provided with a 10.0 MHz reference output.

4. GENERAL REQUIREMENTS.

4.1 Power source. MIL-T-28800 nominal power source requirements are invoked. Maximum power consumption: 250W.

4.1.1 Time base power. When equipped with a temperature stabilized oscillator, the equipment shall be provided with a power control position wherein only the time base oscillator and oven are energized.

4.2 Weight. 20 kg (44 lb) maximum.

4.3 Digital interface. A digital interface shall be provided in accordance with MIL-T-28800.

4.4 Lithium batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.